

VEGETABLE CROPS

INSECTS OF CORN, POTATO

Potato Stem Borer

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Cooperative Extension New York State Cornell University

potato stem borer

Hydroecia micacea (Esper)

Introduction

The potato stem borer was first reported as an economic pest in the United States in 1975. A native of Europe, Siberia, and Japan, it was accidentally introduced into the maritime provinces of Canada before 1908. The insect has spread slowly westward and southward, being reported a pest in western Quebec in 1958 and in eastern Ontario in 1968. Infestations found in the northeastern United States are apparently the result of moths flying southward from Quebec and Ontario. The insect attacks a number of crops including corn, potatoes, tomatoes, rhubarb, pumpkins, beets,

and peas. It also feeds on such weeds as quackgrass, green foxtail, barnyard grass, and dock. It overwinters in the egg stage and there is one generation a year.

Adult

The adult (fig. 1) is a brownish moth with tinges of rich reddish brown. This moth is known as the "Rosy Rustic" in Europe. The expanse of the forewings is from 1¼ to 1½ inches (31-37 mm). Hind wings are whitish gray with a darker central line. Moths are in flight from early August until the end of the season.

The eggs are laid in August and September in small groups between the leaf sheath and stem of several perennial weedy grasses. Egg masses are usually laid 1-3 inches above the soil surface. The small, round, slightly flattened

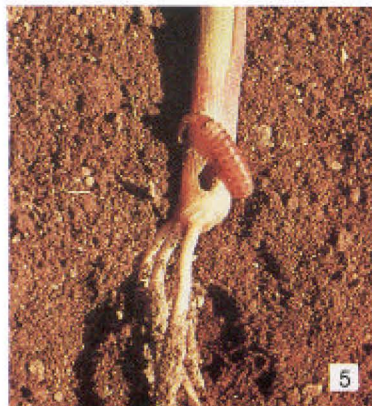
Actual Size

Egg

Larva

Pupa

Adult



eggs are creamy translucent in color when first laid (fig. 2) but darken with age.

Larvae

The larvae hatch in late April during early seasons but otherwise in early May. There are 9 instars before the final molt to the pupal stage. When full grown, the larva is 1 ¼–1 ½ inches (31–37 mm) long. The young larvae have a very characteristic pink or rosy tint (fig. 3) along the sides and back against a background color of dirty white. In the final instars the larva loses much of the rosy tint and is mostly dirty white in color.

The larval period lasts about 8 weeks. The young larvae feed in the stems of quack and other grasses for the first 2–3 weeks. By early June they have outgrown the stems of their primary weed hosts and migrate to the larger stems of cultivated plants such as corn, potatoes, and tomatoes. The pinkish larva may be found either in the stalk or in the soil near the base of the plant.

Pupae

The last instar larvae leave their host plants and pupate (fig. 4) in the soil. After approximately three weeks they emerge as adult moths.

Damage

This insect has the potential to become a serious crop pest. After feeding in weeds the larvae enter cultivated crops where they may damage and destroy several consecutive plants in a row. They enter corn plants when the seedlings are 3–12 inches high by cutting an entry hole at the base of

the plant just below the soil surface (fig. 5). They tunnel inside the stems and feed on the growing part of the plant which causes a characteristic flagging (wilting) of the two center leaves. These leaves first wilt then turn brown and die. Because of the growth pattern of corn, plants with damaged growing points will never develop. It is not uncommon in weedy fields to find 50–95 percent of the plants destroyed by the potato stem borer (fig. 6).

Control

A tachinid fly (*Lydella* sp.) is quite common in the field and may become an important parasite of the stem borer larvae. Because grassy weeds are the preferred oviposition site for egg laying they play an important role in stem borer infestations in cultivated crops. To prevent potato stem borer infestations, maintain weed-free fields, borders, and fence-rows by plowing, cultivating, and using herbicides.

Consult your local extension recommendations to determine which crop management practices are the most effective in your area.

Evaluating Populations

Predicting problems on a seasonal basis is difficult because of the potato stem borer's sporadic nature. Once established in an area, weedy fields, fencerows, headlands, and borders are associated with damage from this pest. Light trapping in August and September will help to establish information on population levels. In May the dying yellow or brown center leaves of grassy weeds should be examined to determine the stage and number of borers in the area.

Quantity Discount Available

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